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AIRWORTHINESS DIRECTIVE

The following airworthiness directive (AD) may be applicable to an aircraft which our records indicate is registered in your name. ADs are issued pursuant to ***Canadian Aviation Regulation*** **(CAR) 593.** Pursuant to **CAR 605.84** and the further details of **CAR Standard 625, Appendix H,** the continuing airworthiness of a Canadian registered aircraft is contingent upon compliance with all applicable ADs. Failure to comply with the requirements of an AD may invalidate the flight authorization of the aircraft. Alternative means of compliance shall be applied for in accordance with **CAR 605.84** and the above-referenced **Standard.**

This AD has been issued by the Continuing Airworthiness Division (AARDG), Aircraft Certification Branch, Transport Canada, Ottawa, telephone (613) 952-4357.

Number: **CF-2004-04R2**

Subject: **Bombardier CL-600-2C10 & CL-600-2D24 (CRJ-700 and CRJ-900 Series) – Fuel Ejector Leak Check**

Effective: This revision retains the effective date of CF-2004-04R1 of 8 April 2004.

Revision: Supersedes Airworthiness Directive (AD) CF-2004-04R1 issued 1 April 2004.

Applicability: Bombardier Inc. Model CL-600-2C10 – CRJ-700 - serial numbers 10003 and subsequent. Bombardier Inc. Model CL-600-2D24 – CRJ-900 - serial numbers 15001 and subsequent.

Compliance: When indicated, unless already accomplished.

Background: Six reports have been received of a longitudinal crack in the primary fuel ejector, which resulted in leakage of fuel into the center fuel tank. If not detected and corrected, cracking of a primary fuel ejector could lead to a requirement to shut down an engine during flight.

Revision 1 was issued to remove high time ejectors from in-service aircraft and to replace the repeat maintenance leak check with an operational leak check.

Revision 2 has been issued to clarify the instructions for leak checks carried out during taxi and for proceeding with an empty center fuel tank.

Corrective Actions:

Part A – AFM Revision

1. Within 14 days of 23 February 2004,

   (a) Amend all copies of the AFM by incorporating the following applicable Temporary Revision (TR):

   (i) TR RJ 700/52-2 for CL-600-2C10
   (ii) TR RJ 900/10-1 for CL-600-2D24

   (b) Brief all flight crew on the Limitation - Power Plant requirement to monitor center tank fuel quantity throughout flight and on the revisions to the Abnormal Procedures – Fuel System.

Part B – Removal of Primary Fuel Ejectors Over 4500 Hours

2. Within three (3) days of the effective date of this revision, determine the number of hours air time on each of the two primary fuel feed ejectors, P/N T99A38-603, installed in each aircraft and replace any main fuel feed ejectors that exceed 4,500 hours air time, before further flight.

Part C - Operational Leak Check

3. Within 14 days of the effective date of this revision, implement an operational leak check for those aircraft in which the accumulated air time, on either one or both of the primary ejectors, P/N T99A38-603, exceeds **2,000 hours air time**. The check can be carried out using the procedure detailed in either paragraph 4 (between flight check) or paragraph 5 (center fuel tank empty).

   NOTE 1: Performing either of the leak checks detailed in paragraph 4 or 5 below eliminates the requirement to perform the "Before Flight Boost Pump" leak check specified in AFM TR 700/52-2 for the CL-600-2C10 and in AFM TR RJ 900/10-1 for the CL-600-2D24.

   NOTE 2: Performing either of the leak checks below does not alleviate the requirement in paragraph 1 of this directive to monitor the center fuel tank quantity throughout the flight.

4. For the between-flight check, the fuel quantity in the center tank must be 4,000 lbs or less. Carry out the primary fuel ejector check between each flight as follows:

   (a) With both engines operating at ground idle or taxi thrust, open both L&R XFER SOV circuit breakers, 1N9 & 2P8, and monitor the center tank fuel quantity for five minutes.

      NOTE: If center tank contains fuel when performing this test, the following EICAS caution message may be displayed: L XFER SOV and/or R XFER SOV.

   (b) If a fuel quantity increase of more than 150 lbs (68 kg) is detected in the center fuel tank, before further flight, turn the aircraft over to maintenance for investigation of a fuel leak. If no fuel quantity increase is detected or the increase is less than 150 lbs (68 kg), close circuit breakers and continue operations.

   (c) If required under paragraph 4.(b), carry out a general visual inspection of the center fuel tank in accordance with the procedures in Part B of Alert Service Bulletin (ASB) 670BA-28-025, dated 12 December 2003, or ASB 670BA-28-025, Revision A, dated 15 December 2003 or later revisions approved by Chief, Continuing Airworthiness, Transport Canada.

   (d) Correct any fuel leaks before further flight.

5. For the center fuel tank empty procedure, the quantity of fuel in the center tank is checked **during pre-flight and post-flight operations** and **monitored during the flight.** Carry out the procedure as follows:

   (a) Dispatch aircraft with less than 300 lbs (136.1 kg) of fuel in center fuel tank and both L&R XFER SOV circuit breakers, 1N9 & 2P8, open and collared. The center fuel tank quantity shall be considered unusable fuel.

      NOTE 1: If center tank contains fuel when dispatching in this condition, the following EICAS caution message may be displayed: L XFER SOV and/or R XFER SOV. Scrolling away message is recommended.

      NOTE 2: If center fuel tank quantity is greater than 300 lbs (136.1 kg), and no leak is suspected, un-collar and close the SOV circuit breakers, 1N9 and 2P8 to transfer the fuel in the center tank to the wings. Open and re-collar the circuit breakers, 1N9 and 2P8, prior to dispatch. Alternately, turn the aircraft over to maintenance for draining of the

tank.

(b) Prior to flight, if a fuel quantity increase of more than 150 lbs (68 kg) is detected in the center fuel tank, turn the aircraft over to maintenance for investigation of a fuel leak.

(c) During flight, if an abnormal increase in the center fuel tank quantity is detected or the center fuel tank quantity exceeds 600 lbs (272.2 kg), implement the Abnormal Procedures in appropriate AFM TR - RJ 700/61-1 or RJ 900/31-1. Upon landing, investigate fuel leak as detailed in paragraph 5.(d) of this directive.

(d) If required under paragraph 5.(b), or 5.(c) of this directive, carry out a general visual inspection of the center fuel tank in accordance with the procedures in Part B of ASB 670BA-28-025, dated 12 December 2003, or ASB 670BA-28-025, Revision A, dated 15 December 2003 or later revisions approved by Chief, Continuing Airworthiness, Transport Canada. Correct any fuel leaks before further flight.

6. Brief all flight crew on the procedure in use for the leak check - paragraph 4 or paragraph 5 of this directive - and insert a copy of this directive into each copy of the AFM.

Part D – Replacement of High Time Ejectors

7. Replace high-time primary fuel feed ejectors, P/N T99A38-603, in accordance with the following schedule:

(a) For primary fuel feed ejectors that have accumulated in excess of 2,750 hours air time upon the effective date of this revision, replace within the next 750 hours air time or before the ejectors accumulate 4,500 hours air time, whichever occurs first.

(b) For primary fuel feed ejectors that have accumulated 2,750 hours air time or less upon the effective date of this directive, replace the ejectors before they accumulate 3,500 hours air time.

Authorization: For Minister of Transport

Bohdan Goyaniuk

B. Goyaniuk
Chief, Continuing Airworthiness

Contact: Mr. Ian McLellan, Continuing Airworthiness, Ottawa, telephone (613) 952-4362, facsimile (613) 996-9178 or e-mail mclelli@tc.gc.ca or any Transport Canada Centre.